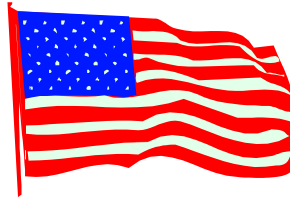


CALIFORNIA BUILDING STANDARDS COMMISSION

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Thank you for visiting the California Building Standards Commission's Web Site

This document is the

October 1, 2002 Errata

To The

2001 Edition of the California Code of Regulations

Title 24, Part 3

The California Electrical Code

Should you decide to print these 10 pages, we strongly suggest that you do so on buff colored paper so that you will quickly recognize them as errata pages.

This page and the next "cover page" are single sided. Thereafter, all pages are double sided for placement into your copy of the 2001 California Electrical Code.

Sorry, we cannot provide a seven-hole punch for your pages.

California Electrical Code
(Part 3, Title 24, C.C.R.)

October 1, 2002 ERRATA

It is suggested that the section number as well as the page number be checked when inserting this material and removing the superseded material. In case of doubt, rely on the section numbers rather than the page numbers, since the section numbers must run consecutively.

It is further suggested that superseded material be retained with this revision record sheet so that the prior wording of any section can be easily ascertained.

Please keep replaced pages with this revision for future reference.

Remove White Pages

xxxix, xl
xli, xlii
70-23, 70-24
HISTORY NOTE APPENDIX

Insert Buff Pages

xxxix, xl
xli, xlii
70-23, 70-24
HISTORY NOTE APPENDIX

ARTICLE 780—CLOSED-LOOP AND PROGRAMMED POWER DISTRIBUTION

ENFORCING AUTHORITY	Local Building Official		Local Fire Official	Local Health Official	State Agency							
ADOPTING AGENCY	HCD		DSA AC	SFM	DHS	DSA SS	OSHPD				*	BSC
	1	2					1	2	3	4		
Adopt entire NEC article without amendments	X	X				X	X	X	X	X		X
Adopt entire NEC article as amended (amendments listed below)												
Adopt only those sections which are listed below												

ARTICLE 800—COMMUNICATIONS CIRCUITS

ENFORCING AUTHORITY	Local Building Official		Local Fire Official	Local Health Official	State Agency							
ADOPTING AGENCY	HCD		DSA AC	SFM	DHS	DSA SS	OSHPD				*	BSC
	1	2					1	2	3	4		
Adopt entire NEC article without amendments						X	X	X	X	X		X
Adopt entire NEC article as amended (amendments listed below)												
Adopt only those sections which are listed below												

ARTICLE 810—RADIO AND TELEVISION EQUIPMENT

ENFORCING AUTHORITY	Local Building Official		Local Fire Official	Local Health Official	State Agency							
ADOPTING AGENCY	HCD		DSA AC	SFM	DHS	DSA SS	OSHPD				*	BSC
	1	2					1	2	3	4		
Adopt entire NEC article without amendments						X	X	X	X	X		X
Adopt entire NEC article as amended (amendments listed below)												
Adopt only those sections which are listed below												

ARTICLE 820—COMMUNITY ANTENNA TELEVISION AND RADIO DISTRIBUTION SYSTEMS

ENFORCING AUTHORITY	Local Building Official		Local Fire Official	Local Health Official	State Agency							
ADOPTING AGENCY	HCD		DSA AC	SFM	DHS	DSA SS	OSHPD				*	BSC
	1	2					1	2	3	4		
Adopt entire NEC article without amendments							X	X	X	X		X
Adopt entire NEC article as amended (amendments listed below)												
Adopt only those sections which are listed below												

ARTICLE 830—NETWORK-POWERED BROADBAND COMMUNICATIONS SYSTEMS

ENFORCING AUTHORITY	Local Building Official		Local Fire Official	Local Health Official	State Agency							
ADOPTING AGENCY	HCD		DSA AC	SFM	DHS	DSA SS	OSHPD				*	BSC
	1	2					1	2	3	4		
Adopt entire NEC article without amendments						X	X	X	X	X		X
Adopt entire NEC article as amended (amendments listed below)												
Adopt only those sections which are listed below												

CHAPTER 9—TABLES

ENFORCING AUTHORITY	Local Building Official		Local Fire Official	Local Health Official	State Agency							
ADOPTING AGENCY	HCD		DSA AC	SFM	DHS	DSA SS	OSHPD				*	BSC
	1	2					1	2	3	4		
Adopt entire NEC article without amendments	X	X				X	X	X	X	X		X
Adopt entire NEC article as amended (amendments listed below)												
Adopt only those sections which are listed below												

*DOSH has not adopted the 1996 nor the 1999 edition of the National Electrical Code. The 1995 edition of the California Electrical Code remains effective.

APPENDIXES A AND B

ENFORCING AUTHORITY	Local Building Official			Local Fire Official	Local Health Official	State Agency							
ADOPTING AGENCY	HCD		DSA AC	SFM	DHS	DSA SS	OSHDP				* DOSH	BSC	
	1	2					1	2	3	4			
Adopt entire NEC article without amendments							n/a	n/a	n/a	n/a			
Adopt entire NEC article as amended (amendments listed below)													
Adopt only those sections which are listed below													

APPENDIX C

ENFORCING AUTHORITY	Local Building Official			Local Fire Official	Local Health Official	State Agency							
ADOPTING AGENCY	HCD		DSA AC	SFM	DHS	DSA SS	OSHDP				* DOSH	BSC	
	1	2					1	2	3	4			
Adopt entire NEC article without amendments	X	X					X	X	X	X			
Adopt entire NEC article as amended (amendments listed below)													
Adopt only those sections which are listed below													

APPENDIXES D AND E

ENFORCING AUTHORITY	Local Building Official			Local Fire Official	Local Health Official	State Agency						
ADOPTING AGENCY	HCD		DSA AC	SFM	DHS	DSA SS	OSHDP				* DOSH	BSC
	1	2					1	2	3	4		
Adopt entire NEC article without amendments						X	X	X	X	X		
Adopt entire NEC article as amended (amendments listed below)												
Adopt only those sections which are listed below												

*DOSH has not adopted the 1996 nor the 1999 edition of the National Electrical Code. The 1995 edition of the California Electrical Code remains effective.

ARTICLE 089 — ADMINISTRATION

Note: Article 089 has no corresponding Article in the NEC.

089-1. Title. *The provisions contained in this Code shall be known as the “California Electrical Code,” a portion of the “California Building Standards Code,” as defined in the “California Building Standards Law” commencing with Section 18901 of the Health and Safety Code, and may be cited and referred to as the “California Electrical Code.” The unqualified words “This Code” as used herein, refer only to the California Electrical Code, and do not include any other portions of the California Building Standards Code. These provisions may also be cited as “C.E.C.” or “Part 3” within other parts of the California Building Standards Code (Title 24).*

089-2. Purpose. *The purpose of this Code is to provide minimum standards to safeguard life or limb, health, property, and public welfare, and to protect against hazards that may arise from the use of electricity by regulating and controlling the design, construction, installation, quality of materials, location, and operation of electrical equipment, wiring, and systems.*

089-3. Scope. *The provisions of the Code and the building standards contained herein, including those standards adopted by reference without amendments, where specifically adopted by the listed agencies under their cited authority and enforced by the enforcing agency specified in Section 089-8, shall apply to the construction, alteration, moving, demolition, repair, and use of all electrical equipment, wiring, and systems in or on any building or structure or outdoors on any premise or property; except such electrical equipment, wiring and systems which are expressly exempted by Section 089-4.*

Exception: [For HCD 1] Additions, Alterations, Repairs, and Moved Buildings. *Notwithstanding other provisions of law, alterations, repairs, replacements, and moved buildings are governed by Health and Safety Code, Division 13, Part 1.5, Sections 17912, 17920.3, 17922(c), 17922.3, 17958.8, and 17958.9, known as the State Housing Law, and are implemented by the California Code of Regulations, Title 25, Chapter 1. Health and Safety Code Sections 17958.8 and 17958.9 are repeated here for clarity and read as follows:*

(a) 17958.8. *“Local ordinances or regulations governing alterations and repair of existing buildings shall permit the replacement, retention, and extension of original materials and the use of original methods of construction as long as the hotel, lodging house, motel, apartment house, or dwelling, or portions thereof, or building and structure accessory thereto,*

complies with the provisions published in the State Building Standards Code and the other rules and regulations of the department or alternative local standards adopted pursuant to Section 17920.7 and does not become or continue to be a substandard building.”

(b) 17958.9. *“Local ordinances or regulations governing the moving of apartment houses and dwellings shall, after July 1, 1978, permit the retention of existing materials and methods of construction so long as the apartment house or dwelling complies with the building standards for foundation applicable to new construction, and does not become or continue to be a substandard building.”*

089-4. Exempted from this Code. *This Code does not cover:*

(a) *Installations in ships, watercraft other than floating dwelling units, railway rolling stock, aircraft, automotive vehicles, commercial coaches, mobile homes, and recreational vehicles.*

(b) *Installations underground in mines, mine shafts, and tunnels.*

(c) *Installations of railways for generation, transformation, transmission, or distribution of power used exclusively for operation of rolling stock or installations used exclusively for signaling and communication purposes.*

(d) *Installation of communication equipment under the exclusive control of communication utilities, located outdoors or in building spaces used exclusively for such installations.*

(e) *Installations under the exclusive control of electrical utilities for the purpose of communication or metering; or for the generation, control, transformation, transmission, and distribution of electrical energy located in buildings used exclusively by utilities for such purposes or located outdoors on property owned or leased by the utility or on public highways, streets, roads, etc., or outdoors by established rights on private property.*

Exception to (d) and (e): In places of employment, the following shall apply: installations of conductors, equipment, and associated enclosures subject to the jurisdiction of the California Public Utilities Commission, that are owned, operated, and maintained by an electric, communications, or electric railway utility, but not including conduit, vaults, and other like enclosures containing conductors and equipment of such a utility when located indoors or on premises not used exclusively for utility purposes, but do not apply to the utility’s conductors and equipment therein.

(f) *Installations on highways or bridges.*

089-5. Non-Building Standards, Orders and Regulations.

(a) Requirements contained in the National Electrical Code (NEC), or in any other referenced code, document, or standard, which are not building standards as defined in Section 18912 of the Health and Safety Code, shall not be construed as a part of the provisions of this Code.

(b) For the applicability of regulations, safety, and other orders, and standards which relate to the administration, enforcement, maintenance, operation, and similar non-building standards, see other titles of the California Code of Regulations.

089-6. Order of Precedence and Use.

(a) In the event of any difference between the provisions of this Code and the National Electrical Code (NEC), or between this Code and the provisions of any other referenced code, document, or standard, the text of this Code shall govern. Where a specific provision varies from a general provision, the specific provisions shall apply.

(b) If a section of this Code makes a cross-reference to another section or table in the National Electrical Code (NEC), such cross-referencing shall be interpreted to mean that which is shown in the NEC unless the referenced section or table has been amended or modified in this Code for the particular enforcing agency.

(c) If a section in the National Electrical Code (NEC) makes a cross-reference to another section or table in the NEC, such cross-referencing shall be interpreted to mean that which is shown in the NEC unless the referenced section or table has been amended or modified in this Code or the particular enforcing agency.

(d) When adopted by a State agency, and approved by the Commission, the text of amended provisions contained in this Code shall take precedence over the corresponding provisions of the National Electrical Code (NEC).

0.89-6.1 [for HCD 1] Local Variances. For clarification purposes, the applicable Health & Safety Code Section 17958.5 is repeated here and reads as follows:

Section 17958.5. “Except as provided in Section 17922.6, in adopting the ordinances or regulations pursuant to Section 17958, a city or county may make such changes or modifications in the requirements contained in the provisions published in the California Building Standards Code and the other regulations adopted pursuant to Section 17922 as it determines, pursuant to the provisions of Section 17958.7, are reasonably necessary because of local climatic, geological, or topographical conditions.”

“For purposes of this subdivision, a city and county may make reasonably necessary modifications to the requirements, adopted pursuant to Section 17922, contained in the provisions of the code and regulation on the basis of local conditions.”

089-6.2 [For HCD 1] Findings, Filing, and Rejections of Local Variances. For clarification purposes, the applicable subsection of Health & Safety Code Section 17958.7 is repeated here and reads as follows:

Section 17958.7

(a) “Except as provided in Section 17922.6, the governing body of a city or county, before making any modifications or changes pursuant to Section 17958.5, shall make an express finding that such modifications or changes are reasonably necessary because of local climatic, geological or topographical conditions. Such a finding shall be available as a public record. A copy of those findings, together with the modification or change expressly marked and identified to which each finding refers, shall be filed with the California Building Standards Commission. No modification or change shall become effective or operative for any purpose until the finding and the modification or change have been filed with the California Building Standards Commission.”

(b) “The California Building Standards Commission may reject a modification or change filed by the governing body of a city or county if no finding was submitted.”

089-7. Application.

1. BSC—California Building Standards Commission.

Application—State buildings including buildings constructed by the Trustees of the California State University and buildings designed and constructed by the Regents of the University of California where no state agency has the authority to adopt building standards applicable to such buildings.

Enforcing Agency—State or Local agency specified by the applicable provisions of law.

Authority Cited—Health and Safety Code Section 18934.5.

Reference—Health and Safety Code Sections 18901 through 18971.

2. DHS—Department of Health Services.

A. Application—Commissary serving mobile food preparation units

Enforcing Agency—The local health agencies or the Department of Health Services.

(b) To Be Grounded. Receptacles and cord connectors that have grounding contacts shall have those contacts effectively grounded.

Exception No. 1: Receptacles mounted on portable and vehicle-mounted generators in accordance with Section 250-34.

Exception No. 2: Replacement receptacles as permitted by Section 210-7(d)

(c) Methods of Grounding. The grounding contacts of receptacles and cord connectors shall be grounded by connection to the equipment grounding conductor of the circuit supplying the receptacle or cord connector.

FPN: For installation requirements for the reduction of electrical noise, see Section 250-146(d).

The branch-circuit wiring method shall include or provide an equipment grounding conductor to which the grounding contacts of the receptacle or cord connector shall be connected.

FPN No. 1: Section 250-118 describes acceptable grounding means.

FPN No. 2: For extensions of existing branch circuits, see Section 250-130.

(d) Replacements. Replacement of receptacles shall comply with (1), (2), and (3) as applicable.

(1) Where a grounding means exists in the receptacle enclosure or a grounding conductor is installed in accordance with Section 250-130(c), grounding-type receptacles shall be used and shall be connected to the grounding conductor in accordance with Sections 210-7(c) or 250-130(c).

(2) Ground-fault circuit-interrupter protected receptacles shall be provided where replacements are made at receptacle outlets that are required to be so protected elsewhere in this Code.

(3) Where a grounding means does not exist in the receptacle enclosure, the installation shall comply with (a), (b), or (c).

(a) A nongrounding-type receptacle(s) shall be permitted to be replaced with another nongrounding-type receptacle(s).

(b) A nongrounding-type receptacle(s) shall be permitted to be replaced with a ground-fault circuit interrupter-type of receptacle(s). These receptacles shall be marked "No Equipment Ground." An equipment grounding conductor shall not be connected from the ground-fault circuit interrupter-type receptacle to any outlet supplied from the ground-fault circuit interrupter receptacle.

(c) A nongrounding-type receptacle(s) shall be permitted to be replaced with a grounding-type receptacle(s) where

supplied through a ground-fault circuit interrupter. Grounding-type receptacles supplied through the ground-fault circuit interrupter shall be marked "GFCI Protected" and "No Equipment Ground." An equipment grounding conductor shall not be connected between the grounding-type receptacles.

(e) Cord- and Plug-Connected Equipment. The installation of grounding-type receptacles shall not be used as a requirement that all cord- and plug-connected equipment be of the grounded type.

FPN: See Section 250-114 for types of cord- and plug-connected equipment to be grounded.

(f) Noninterchangeable Types. Receptacles connected to circuits that have different voltages, frequencies, or types of current (ac or dc) on the same premises shall be of such design that the attachment plugs used on these circuits are not interchangeable.

(g) [For HCD 1/AC with exceptions, DSA/AC] Installation Height. Where access for people with physical disabilities is required by Article 089-7, the center of receptacle outlets on branch circuits of 30 amperes or less shall be installed not more than 48 inches (1219 mm) nor less than 15 inches (381 mm) above the floor or working platform.

Exception No. 1: Receptacle outlets installed as a part of permanently installed baseboard heaters are exempt.

Exception No. 2: Required receptacle outlets shall be permitted in floors when adjacent to sliding panels or walls.

Exception No. 3: Baseboard electrical outlets used in relocatable partitions, window walls, or other electrical convenience floor outlets are not subject to the minimum height requirements.

Exception No. 4: This section shall not apply to existing buildings when the enforcing agency determines that compliance with these standards would create an unreasonable hardship.

(g.1) [For HCD 1/AC] When access for persons with physical disabilities is required in covered multifamily dwelling units, the center of receptacle outlets on branch circuits of 30 amperes or less shall be located no higher than 48 in. (1219 mm), and no lower than 15 in. (381 mm), above the floor. If the reach is over an obstruction (for example, a kitchen base cabinet) between 20 and 25 in. (508 and 635 mm) in depth, the maximum height is reduced to 44 in. (1118 mm) for forward approach, or 46 in. (1168 mm) for side approach, provided the obstruction is no more than 24 in. (610 mm) in depth. Obstructions shall not extend more than 25 in. (635 mm) from the wall beneath the receptacle.

Outlets that do not satisfy these specifications are acceptable provided that comparable outlets that perform the same functions are provided within the same area and are accessible.

210-8. Ground-Fault Circuit-Interrupter Protection for Personnel.

FPN: See Section 215-9 for ground-fault circuit-interrupter protection for personnel on feeders.

(a) Dwelling Units. All 125-volt, single-phase, 15- and 20-ampere receptacles installed in the locations specified below shall have ground-fault circuit-interrupter protection for personnel.

- (1) Bathrooms.
- (2) Garages, and also accessory buildings that have a floor located at or below grade level not intended as habitable rooms and limited to storage areas, work areas, and areas of similar use.

Exception No. 1: Receptacles that are not readily accessible.

Exception No. 2: A single receptacle or a duplex receptacle for two appliances located within dedicated space for each appliance that, in normal use, is not easily moved from one place to another, and that is cord- and plug-connected in accordance with Section 400-7(a)(6), (a)(7), or (a)(8).

Receptacles installed under the exceptions to Section 210-8(a)(2) shall not be considered as meeting the requirements of Section 210-52(g).

- (3) Outdoors.

Exception: Receptacles that are not readily accessible and are supplied by a dedicated branch circuit for electric snow-melting or deicing equipment shall be permitted to be installed in accordance with the applicable provisions of Article 426.

- (4) Crawl spaces. Where the crawl space is at or below grade level.
- (5) Unfinished basements. For purposes of this section, unfinished basements are defined as portions or areas of the basement not intended as habitable rooms and limited to storage areas, work areas, and the like.

Exception No. 1: Receptacles that are not readily accessible.

Exception No. 2: A single receptacle or a duplex receptacle for two appliances located within dedicated space for each appliance that, in normal use, is not easily moved from one place to another, and that is cord- and plug-connected in accordance with Section 400-7(a)(6), (a)(7), or (a)(8).

Receptacles installed under the exceptions to Section 210-8(a)(5) shall not be considered as meeting the requirements of Section 210-52(g).

- (6) Kitchens. Where the receptacles are installed to serve the countertop surfaces.
- (7) Wet bar sinks. Where the receptacles are installed to serve the countertop surfaces and are located within 6 ft (1.83 m) of the outside edge of the wet bar sink. Receptacle outlets shall not be installed in a face-up position in the work surfaces or countertops.

(b) Other than Dwelling Units. All 125-volt, single-phase, 15- and 20-ampere receptacles installed in the locations specified below shall have ground-fault circuit-interrupter protection for personnel.

- (1) Bathrooms
- (2) Rooftops

Exception: Receptacles that are not readily accessible and are supplied from a dedicated branch circuit for electric snow-melting or deicing equipment shall be permitted to be installed in accordance with the applicable provisions of Article 426.

210-9. Circuits Derived from Autotransformers. Branch circuits shall not be derived from autotransformers unless the circuit supplied has a grounded conductor that is electrically connected to a grounded conductor of the system supplying the autotransformer.

Exception No. 1: An autotransformer shall be permitted without the connection to a grounded conductor where transforming from a nominal 208 volts to a nominal 240-volt supply or similarly from 240 volts to 208 volts.

Exception No. 2: In industrial occupancies, where conditions of maintenance and supervision ensure that only qualified persons will service the installation, autotransformers shall be permitted to supply nominal 600-volt loads from nominal 480-volt systems, and 480-volt loads from nominal 600-volt systems, without the connection to a similar grounded conductor.

210-10. Ungrounded Conductors Tapped from Grounded Systems. Two-wire dc circuits and ac circuits of two or more ungrounded conductors shall be permitted to be tapped from the ungrounded conductors of circuits that have a grounded neutral conductor. Switching devices in each tapped circuit shall have a pole in each ungrounded conductor. All poles of multipole switching devices shall manually switch together where such switching devices also serve as a disconnecting means as required by the following:

- (1) Section 410-48 for double-pole switched lampholders
- (2) Section 410-54(b) for electric-discharge lamp auxiliary equipment switching devices
- (3) Section 422-31(b) for an appliance

HISTORY NOTE APPENDIX

California Electrical Code

California Code of Regulations, Title 24, Part 3

Notes

For prior history, see the History Note Appendix to the *California Electrical Code*, 1998 Triennial Edition effective July 1, 1999.

1. California Building Standards Commission 1999 Annual code adoption cycle, Office of the State Fire Marshall, by reference of the 1999 *National Electrical Code (NEC)* with necessary California amendments; repeal of the 1996 edition of the *NEC*. Approved by the California Building Standards Commission on May 24, 2000, published on May 1, 2002, and effective on November 1, 2002.

Errata October 1, 2002:

Page xxxix: In the **Article 780** matrix table, under HCD 1 and HCD 2, add “x’s” to Adopt entire NEC article without amendments.

Page xl: In the **Appendix C** matrix table under HCD 1 and HCD 2, add “x’s” to indicate Adopt entire NEC article without amendments. In the **Appendixes D and E** matrix table remove “x’s” from HCD 1 and HCD 2 columns.

Page xli: In the third line of **089-1. Title**, revise “ad defined in” to “as defined in.”

Page xlii: In the 9th line of **Section 17958.5**, add a quotation mark after *or topographical condition*.

Page 70-23: In paragraph (g) after the dimension “48 inches” add “(1219 mm)” and after “15 inches” add “(381 mm).”

